REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Claims 1, 4-13, 15-17, 19 and 20 are pending. Claims 1, 4-13, 15-17, 19 and 20 have been rejected.

Claims 1, 7, 10, and 12 have been amended. Claims 6 and 11 have been canceled. No claims have been added. Support for the amendments is found in the specification, the drawings, and in the claims as originally filed. Applicants submit that the amendments do not add new matter.

Applicants reserve all rights with respect to the applicability of the Doctrine of Equivalents.

CLAIM OBJECTIONS

Claims 2-3 and 14 have been objected to because of informalities.

Applicants here have amended the status identifiers of claims 2-3 and 14 to overcome the Examiner's objection.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1, 4-6, 10-12, 15-16 and 19 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,684,247 B1 to Santos et al. ("Santos").

Applicants have amended claim 1 to include extracting information from the periodic peaks regarding congestion conditions within the network, wherein the extracting of the information regarding the congestion conditions includes determining a bandwidth of one or more communication links from the periodic peaks.

Santos discloses measuring metrics data for links in the network, selecting a statistical model for the link, and calculating estimated metrics data using the selected model, such that a

difference between the estimated metrics data and the measured metrics data is small (col. 5, lines 24-41). More specifically, Santos discloses that

> FIG. 6 is a graphical representation of a measured metric data, such as average time delay, the associated estimated metric based on the model, and a predetermined threshold, in accordance with an embodiment of the invention. The measured metric data is illustrated with a dotted line 600; the estimated metric is illustrated with a solid line 610; and the predetermined threshold is illustrated with a dashed line 620. The predetermined threshold, which may be specified by a network administrator or user, sets an upper bound on a tolerable time delay associated with a link.

(Santos, col. 6, lines 50-60)

In particular, Santos discloses that

> In the embodiment of FIG. 6, monitoring program 260 determines that the average estimated time delay over the interval of time I for a link is 2.82 msec. Assuming that the predetermined threshold for the link is 2.75, ... monitoring program 260 may then determine that the difference between the average estimated time delay of 2.82 msec and the predetermined threshold of 2.75 is statistically significant, and thus a congestion exists in the link.

(Santos, Figure 6, col. 6, line 50- col. 7, line 3) (emphasis added)

Thus, Santos merely discloses calculating one metrics (the estimated time delay) from the statistical model of the measured data of the same metrics (time delays), in contrast to determining a bandwidth of one or more communication links (one metrics) from the periodic peaks derived from the invariant distribution of measured packet round trip times (another metrics), as recited in amended claim 1. Additionally, Santos merely discloses determining the congestion in the link by comparing the average estimated time delay with a predetermined time delay threshold, in contrast to determining a bandwidth of one or more communication links from the periodic peaks derived from the invariant distribution of measured packet round trip times, as recited in amended claim 1. Because Santos does not disclose all limitations of amended claim 1, applicants respectfully submit that amended claim 1 is not anticipated by Santos under 35 U.S.C. § 102(e).

Amended claim 10 includes the following limitations: extracting the bandwidth information regarding one or more congested links within the network from the periodic peaks derived from the invariant distribution of measured packet round trip times.

As set forth above, Santos merely discloses calculating the average estimated time delay based on the statistical model of measured time delays, in contrast extracting a bandwidth information of one or more congested links within the network from the periodic peaks derived from the invariant distribution of measured packet round trip times, as recited in amended claim 10.

Because Santos does not disclose all limitations of amended claim 10, applicants respectfully submit that amended claim 10 is not anticipated by Santos under 35 U.S.C. § 102(e).

Claim 16 includes estimating congestion in a communication network from bandwidth bottleneck information obtained through a plot exhibiting periodic peaks, the plot derived from an invariant distribution of numbers of occurrences of measurements of packet round trip times within the network applied with an analytical tool.

With respect to claim 16, Santos, as set forth above, merely discloses determining the congestion in the link by comparing the average estimated time delay calculated from the statistical model of measured time delays with a predetermined time delay threshold, in contrast to estimating congestion in a communication network from bandwidth bottleneck information obtained through a plot exhibiting periodic peaks, the plot derived from an invariant distribution of numbers of occurrences of measurements of packet round trip times within the network applied with an analytical tool, as recited in amended claim 16.

Because Santos does not disclose all limitations of amended claim 16, applicants respectfully submit that amended claim 16 is not anticipated by Santos under 35 U.S.C. § 102(e).

Given that claims 4-9, 11-13, 15, 17, and 19-20 depend from independent claims 1, 10, and 16 respectively, and add additional limitations, Applicants respectfully submit that claims 4-9, 11-13, 15, 17, and 19-20 are not anticipated by Santos under 35 U.S.C. § 102(e).

REJECTIONS UNDER 35 U.S.C. § 103

Claims 7-9, 13, 17 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Santos, in view of U.S. Publication No. 2001/0032269 A1 to Wilson ("Wilson").

As set forth above, Santos discloses determining the congestion in the link by comparing the average estimated time delay with a predetermined time delay threshold. Santos discloses that the average estimated time delay is calculated based on the statistical model of measured time delays.

Wilson discloses sending data packets from a sending host to a sending switch and then to a target switch and to a receiving host. The data packets arriving to the sending switch are kept in the input buffer of the sending switch ([0038]). Further, Wilson discloses monitoring the capacity of the input buffer. When the buffer level nears its capacity, the data packet sent to the target switch and further to the receiving host are marked to indicate possible congestion [0040]. It is respectfully submitted that Santos does not disclose a combination with Wilson, and Wilson does not disclose a combination with Santos. Santos teaches calculating the estimated time delay based on the measured time delays and comparing the estimated time delay with a predetermined threshold. Wilson teaches marking data packets depending on the capacity of the buffer. It would be impermissible hindsight, based on applicants' own disclosure, to combine Wilson and Santos.

Furthermore, even if Santos and Wilson were combined, such a combination would lack the following limitations of amended claim 1: determining a bandwidth of one or more

communication links (one metrics) from the periodic peaks derived from the invariant distribution of measured packet round trip times, as recited in amended claim 1. Additionally, a combination of Santos and Wilson fails to disclose determining the congestion in the link that includes determining a bandwidth of one or more communication links from the periodic peaks derived from the invariant distribution of measured packet round trip times, as recited in amended claim 1.

Therefore, it is respectfully submitted that amended claim 1 is not obvious under 35 U.S.C. § 103(a) over Santos in view of Wilson.

Furthermore, even if Santos and Wilson were combined, such a combination would lack the following limitations of amended claim 10: extracting a bandwidth information of one or more congested links within the network from the periodic peaks derived from the invariant distribution of measured packet round trip times.

Therefore, it is respectfully submitted that amended claim 10 is not obvious under 35 U.S.C. § 103(a) over Santos in view of Wilson.

Furthermore, even if Santos and Wilson were combined, such a combination would lack the following limitations of amended claim 16: estimating congestion in a communication network from bandwidth bottleneck information obtained through a plot exhibiting periodic peaks, the plot derived from an invariant distribution of numbers of occurrences of measurements of packet round trip times within the network applied with an analytical tool. Therefore, it is respectfully submitted that amended claim 16 is not obvious under 35 U.S.C. § 103(a) over Santos in view of Wilson.

Given that claims 4-9, 11-13, 15, 17, and 19-20 depend from independent claims 1, 10, and 16 respectively, and add additional limitations, applicants respectfully submit that claims 4-9, 11-13, 15, 17, and 19-20 are not obvious under 35 U.S.C. § 103(a) over Santos in view of Wilson.

CONCLUSION

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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